
# FINDING OF NO SIGNIFICANT IMPACT

## Relocation of the Power Substation
## Grand Canyon National Park

Grand Canyon National Park proposes to relocate a power substation at Grand Canyon Village from an area intended for public use to an area identified as a transportation/utility corridor. The purpose of the proposed undertaking is to remove utility uses from public areas in order to provide a safer and more enjoyable visitor experience in the park.

The existing substation is located next to the Powerhouse building in the Grand Canyon Village National Historic Landmark District. It was built in the mid-1950s in an area that encompasses approximately 800 square feet and is enclosed with a chain-link security fence. Active elements of the substation include a transformer; a voltage regulator; and two substation reclosures (similar to circuit breakers). The substation has an electrical capacity of 8 megawatts and provides 12.5 kV power to the South Rim area, including Desert View, Hermits Rest, Indian Gardens, and Phantom Ranch. This is accomplished through a combined network of overhead and underground distribution lines.

Objectives of the Action

1. Remove the substation from an area intended for visitor use to an area identified as a transportation/utility corridor;
2. Provide a safer and more enjoyable visitor experience in the park;
3. Provide an environment for visitors separate from utility facilities and equipment; and
4. Improve the visual quality within the visitor core of Grand Canyon Village.

In September 2003 the National Park Service (NPS) prepared an *Environmental Assessment/Assessment of Effect for the Relocation of the Power Substation at Grand Canyon Village.* This EA/AEF, in accordance with the National Environmental Policy Act and the National Historic Preservation Act, analyzes the impacts that will likely result from implementation of the project. The EA/AEF evaluated three alternatives, Alternative A, the No Action Alternative, Alternative B, the agency's preferred alternative and Alternative C.

## PREFERRED ALTERNATIVE

This alternative will construct a new power substation south of Grand Canyon Village, as well as an underground distribution line from the new substation to connect with the existing electrical infrastructure. The substation will be contained within a fenced enclosure with dimensions not to exceed 225 feet by 225 feet; however, the size of the enclosure will be the minimized as much as possible. The final size of the enclosure will be reviewed and approved by park management prior to construction. This area will accommodate the fixed equipment needed for the substation and allow vehicles to maneuver safely around it. Its location will be approximately ¼ mile southeast of Pinyon Park where the high voltage power line makes a 75-degree turn to the west as it approaches Grand Canyon Village. Access for the substation and distribution line will be from Center Road, across from the Clinic Road turn-off and south of Pinyon Park, both along existing utility access roads. No outdoor lighting will be used for the substation, unless necessary for short-term repairs or emergencies, or as required by law or policy. For

example, brighter lighting may be required for use in emergency situations requiring nighttime work at the substation, but will only be used on an occasional basis and temporarily. The final lighting plan for the substation will be reviewed and approved by park management.

In addition to building a new substation, an underground power distribution line will be routed east and west from the new substation on the south side of existing sewer and power lines. The proposed alignment will remain within the corridor that has already been disturbed from other utilities. Construction of the distribution line will require an area approximately 30-feet-wide. All construction activities will remain within the already disturbed area. The line going east will follow the existing sewer line and two-track road to Center Road, and then follow Clinic Road and Havasupai Road to an existing switching cabinet (located near the intersection of Havasupai Road and Barry Hance Circle). The length of the distribution line to the east is approximately one mile. The line routed to the west will follow the existing high voltage transmission line and two-track road to a point south of Pinyon Park, near where the high voltage line to Indian Garden branches off. At this point, the electrical line will be placed on the existing overhead pole to connect with the existing infrastructure. The length of the distribution line to the west is approximately ½ mile.

This alternative will also involve removal of the existing substation, as well as the primary line (69 kV) feeding it. The existing overhead secondary lines (480 volts) adjacent to the substation that are part of the Park's overall electrical distribution system will remain intact and in service for the purposes of this project.

In general, construction vehicles and equipment should be able to move overland without substantial improvements to the road or terrain. No new access roads will be built for this project. Access for construction vehicles and equipment will occur along existing roads and rights-of-way, specifically the existing right-of-way road across from Clinic Road along Center Road and the existing utility corridor road accessible through Pinyon Park.

Following establishment of the substation in its new location, APS requires access to this facility for routine monitoring, periodic maintenance and emergency repairs. Minimum standards for road access for these activities include a 12-foot wide road surface with at least 8 inches of aggregate base. As part of this project, approximately 0.3 miles of existing dirt road between Pinyon Park (at the end of Hualapai Road) and the new substation will be upgraded to meet these standards. This road will continue to be gated at its junction with Hualapai Road in Pinyon Park, to restrict access to authorized users only.

Arizona Public Service will perform all work and remove all demolished equipment from the park.

**Construction**

The construction of the substation and distribution line is expected to be completed within a two year timeframe. During this period, the construction work force will peak at approximately 16 people on-site at any one time. Both light and heavy construction equipment, including equipment such as bull dozers and excavators, will likely be necessary to dismantle the existing substation and to construct the new substation and underground distribution lines. Blasting is not anticipated for this project. NPS considers the use of blasting as a last resort, when other tools or equipment are impractical. If blasting is considered the best tool for the job by the contractor and is permitted by NPS, it would be conducted in accordance with Director's Order 65 (Explosives Use and Blasting Safety) and a blasting safety plan would be developed prior to implementation.

**Storage and Staging Area**
Equipment and material staging during construction will occur at the old landfill site just south of Pinyon Park and/or at the area proposed for the new substation. The old landfill site is a disturbed site void of vegetation and has been used as a staging area for various projects in the past. The new substation area will serve as a reporting location for workers and parking space for vehicles during construction. Materials will be hauled to the old landfill site and the new substation area using existing access roads. As proposed, the entire area needed for the substation will be cleared and graded. Approximately one half of the site will be used for storage of construction materials and equipment, while the other half was under construction and visa versa. Once the substation is built, sufficient storage area will be available to serve as a staging area for construction of the distribution line. The substation will not be staffed on a daily basis, but instead will require occasional visits to the substation to maintain the equipment and system.

**Substation and Line Removal**
The existing substation will be disassembled after the new substation and distribution line are in service. All material associated with the substation will be removed from the site, and it will be graded and left in a condition ready for the potential development of the Village Interpretive Center. In addition, the portion of the 69kV line that spans from the substation to the first pole outside the substation will be removed. All poles and other electrical lines will remain intact and in service. The conductor removed from the substation and overhead span will be salvaged or sold by the contractor, and much of the hardware will be recycled. Materials that cannot be recycled will be disposed at approved landfills.

**Cleanup and Restoration**
Waste material and rubbish from all construction areas will be collected, hauled away, and disposed of at approved sites. Upon completion of construction, all remaining disturbed areas will be reclaimed and revegetated as necessary to minimize erosion. The intent will be to restore all construction areas, as nearly as feasible, to their original condition. As previously described, once the existing substation is dismantled, the site will be graded and left in a condition ready for the potential development of the Heritage Education Campus.

**Operation and Maintenance**
The day-to-day operation of the substation and distribution line will be handled by Arizona Public Service (APS), who will control the system with dispatchers in power control centers. These dispatchers use communication facilities to operate circuit breakers that control the transfer of power through the lines. These circuit breakers also operate automatically to ensure safety, for example, in the event of a structure or conductor failure.

Once in the ground, the distribution line will be virtually maintenance free and will not require routine patrols by APS. In the unlikely event that repairs are necessary, the damaged section will be identified, dug up, and replaced.

The all-weather access road will require periodic maintenance to maintain its effectiveness.

**Mitigation Measures**
The mitigation measures listed below are considered part of the preferred alternative and will be followed during project implementation. These actions were developed to lessen the potential for adverse impacts from implementing the preferred alternative, and have proven to be effective in reducing environmental impacts on previous projects.

Geology/Soils

- To minimize soil erosion at the project site, standard erosion control measures including silt fence and sandbags will be used. Any revegetation will use site-adapted native species and/or seed.
- Construction zones will be fenced with construction tape, snow fencing, or some similar material before any construction activity begins. The fencing will define the construction zone and confine activity to the minimum area required for construction. All protection measures will be clearly stated in the construction specifications and workers will be instructed to avoid conducting activities beyond the construction zone as defined by the construction zone fencing.

Biotic Communities

**Vegetation**

- To prevent and minimize the spread of exotic vegetation and noxious weeds, the following mitigation measures will be implemented:
    - Existing populations of exotic vegetation at the construction site will be treated prior to construction activities.
    - All construction equipment that leaves the paved road will be pressure washed prior to entering the park.
    - Parking of vehicles will be limited to the substation and existing roads.
    - Any fill material will be obtained from a park-approved source.
    - After construction is complete, all remaining disturbed areas within the project site, excluding the existing substation site, will be revegetated as necessary, using site-adapted native seed and plants.
    - Native plants will be salvaged from the project site and used to revegetate the site after construction activities have been completed. Plants will also be propagated according to NPS policy, from seed collected on adjoining areas to protect local genotypes.
    - Post project exotic plant monitoring will be conducted in the project area as time and funding allows.

**Wildlife**

- All construction equipment and materials that are brought on site will be inspected for exotic pests. Any exotic pests that are found will be removed prior to equipment or materials entering the park.
- Construction workers and supervisors will be advised to keep their work site clean of debris, especially food wrappers and waste that may attract wildlife. Workers and supervisors will also be instructed to not feed the wildlife.

**Threatened and Endangered / Special Status Species**

- Construction workers and supervisors will be informed about special status species that are known to occur in the project area. If previously unknown special status species are discovered during construction, all work in the immediate vicinity of the discovery will be halted until Park staff re-evaluates the project and the work modified to allow for any protection measures determined necessary to protect the special status species.
- If a condor enters the construction site, construction will cease until it leaves on its own or until techniques are employed by permitted Park staff or Peregrine Fund personnel that results in the individual condor(s) leaving the area.
- Construction workers will be informed to refrain from interacting with condors and to immediately contact the appropriate Park or Peregrine Fund personnel when condor(s) are seen at the construction site.
- The construction site will be cleaned up at the end of each work day (i.e. trash disposed of, scrap material picked up) to minimize the likelihood of condors visiting the construction site.

- To prevent water contamination and potential poisoning of California condors or other wildlife, a vehicle fuel leakage and spill plan will be developed and implemented. The plan will include immediate clean up of any hazardous substance. The plan will define how each hazardous substance will be treated in case of leakage or spill.
- Prior to the start of construction, the Park will contact personnel monitoring California condor locations and movement in the Park to determine the locations and status of condors in or near the project area.
- If non-nesting condors occur within one mile of the project area, blasting will be postponed until the condors leave or are hazed by permitted personnel.
- If condor nesting activity is known within one mile of the project area, then blasting activity will be restricted during the active nesting season. The active nesting season is February 1 – September 30. These dates may be modified based on the most current information regarding condor nesting and consultation with the Park biologist and the Fish and Wildlife Service.
- There are currently no known Mexican spotted owl (MSO) protected activity centers (PAC) within 1 mile of the project area. However, if, as a result of future surveys, this project occurs within one mile of a known PAC nest or roost site, or the boundary of a PAC where the nest or roost site is not known, then all blasting will be restricted to the non-breeding season (September 1 – February 28).

**Cultural Resources**

- If previously unknown archeological resources are discovered during construction, all work within a 100-foot radius of the discovery will be halted until the resources are identified and documented by a qualified archaeologist from the NPS, and an appropriate mitigation strategy developed, if necessary, in accordance with the stipulations of the 1995 P*rogrammatic Agreement Among the National Park Service, the Arizona State Historic Preservation Office and the Advisory Council on Historic Preservation Regarding the General Management Plan/Environmental Impact Statement, Grand Canyon National Park, Arizona*.
- All workers will be informed of the penalties for illegally collecting artifacts or intentionally damaging any archeological or historic property. Workers will also be informed of the correct procedures if previously unknown resources are uncovered during construction activities.
- Should unknown buried deposits be located, data recovery excavations will be undertaken. These subsurface survey and data recovery efforts will be guided by a project-specific research design. Additionally, the NPS will begin consultations under the Native American Graves Protection and Repatriation Act in the even that buried human remains are discovered during archeological excavations or project development.

## ALTERNATIVES CONSIDERED

The EA/AEF evaluated three alternatives in detail for addressing the purpose and need for action; the no action alternative, the preferred alternative and one additional action alternative. The preferred alternative is as described previously in this document in detail.

### Alternative A – No Action

Under the No Action Alternative, the NPS would not relocate the substation that is currently located next to the Powerhouse building in the Grand Canyon Village National Historic Landmark District, nor would they upgrade/expand the distribution system. Existing structures and hardware that are over 50- years old would be repaired and/or replaced as needed during regular maintenance operations and in response to emergency outages on the transmission lines and at the substation. These repairs would be expected to be made with increasing frequency in the future as the facilities increase in age.

The no action alternative does not meet the purpose and need for action, but provides a basis for comparing the management direction and environmental consequences of the action alternative. If the no action alternative were selected, NPS would respond to future needs related to this building without major actions or changes in course.

**Alternative C – Substation with Overhead Distribution Lines**
This alternative is nearly identical to Alternative B, but differs in the type of distribution line that would be installed. Instead of an underground distribution line, this alternative proposes an overhead distribution line within the same corridor described in Alternative B. The construction and location of the substation would be identical to that described in Alternative B.

The overhead power distribution line would be routed east and west from the substation as described in Alternative B. New poles would be placed approximately every 300 feet for the line going east from the substation, and would stand approximately 40-60 feet above ground. This would require approximately 15 new poles. Disturbance around each pole would be limited to a 50-foot diameter area. The distribution line going west out of the substation would be hung with the existing high voltage line. The pole structures themselves (a total of seven) are over 50 years old and would be replaced with new wood poles. Poles would be placed within approximately 100 feet of Center Road on either side, and the electrical lines would span across Center Road at its juncture with Clinic Road. As proposed in Alternative B, APS would perform all work and remove all demolished materials from the park.

Construction, Storage and Staging, Cleanup and Restoration
These components would be the same as described in Alternative B.

Substation and Line Removal
Substation and line removal would be the same as described in Alternative B, but would also include replacement of seven poles along the distribution line west of the proposed substation.

Operation and Maintenance
Operation and maintenance would be similar to Alternative B; however, APS would provide routine maintenance for the overhead lines. APS' preventative maintenance program for transmission lines would include routine (usually once per year) ground patrols that drive the right-of-way in pick-up trucks to detect equipment needing repair or replacement (i.e., structures, insulators, and conductors). Maintenance may include repairing damaged conductors, inspecting and repairing structures, and replacing damaged and broken insulators. Transmission lines are sometimes damaged by storms, floods, vandalism, or accidents and require immediate repair. Emergency repair would involve prompt movement of crews to repair the damage and replace any equipment.

## Alternatives Considered but Dismissed from Detailed Analysis
A second substation site farther south along the high voltage transmission line near the helibase was considered but rejected because access for large trucks would not be possible without substantially altering the existing two-track roads that would be used for access.

**ENVIRONMENTALLY PREFERABLE ALTERNATIVE**
The environmentally preferred alternative is determined by applying the criteria suggested in the National Environmental Policy Act of 1969 (NEPA), which guides the Council on Environmental Quality (CEQ). The CEQ provides direction that "[t]he environmentally preferable alternative is the alternative that will promote the national environmental policy as expressed in NEPA's Section 101:

1. fulfill the responsibilities of each generation as trustee of the environment for succeeding generations;

2. assure for all generations safe, healthful, productive, and esthetically and culturally pleasing surroundings;
3. attain the widest range of beneficial uses of the environment without degradation, risk of health or safety, or other undesirable and unintended consequences;
4. preserve important historic, cultural and natural aspects of our national heritage and maintain, wherever possible, an environment that supports diversity and variety of individual choice;
5. achieve a balance between population and resource use that will permit high standards of living and a wide sharing of life's amenities; and
6. enhance the quality of renewable resources and approach the maximum attainable recycling of depletable resources.

Alternative B is the environmentally preferred alternative. Alternative B was designed to use existing utility/transportation corridors and disturbed areas where possible, and to avoid major or adverse impacts to resources. Alternative B provides a high level of protection of natural and cultural resources and integrates resource protection. Over the long term, Alternative B will be the least visually obtrusive, as the right-of-way is revegetated. Additionally, Alternative B will improve the visual quality of the historic district by removing the existing substation and will improve the visitor experience by removing utilities from areas used or viewed by visitors.

**WHY THE PREFERRED ALTERNATIVE WILL NOT HAVE A SIGNIFICANT EFFECT ON THE HUMAN ENVIRONMENT**

As defined in 40 CFR §1508.27, significance is determined by examining the following criteria:

***Impacts that may be both beneficial and adverse***. As fully discussed in the EA/AEF, the preferred alternative will not affect water quality, archeological resources, ethnographic resources, air quality, floodplains, wetlands, prime or unique farmland, socioeconomics, soundscape, park operations, lightscape or minority or low income populations.

Implementation of the preferred alternative will result in minor, adverse short- and long-term impacts to soils as a result of vehicle compaction, trenching and erosion potential following construction.

Implementation of the preferred alternative will result in minor, adverse short- and long-term impacts to vegetation as a result of removal of some ponderosa pine and pinyon/juniper habitat and the potential for exotic species introduction.

Implementation of the preferred alternative will result in minor, adverse short- and long-term impacts to general wildlife populations through disturbance during construction and loss of habitat.

Implementation of the preferred alternative will result in minor, adverse short- and long-term impacts to Mexican spotted owl through the potential for noise disturbance during construction and loss of potential foraging habitat. For purposes of Section 7 consultation under the Endangered Species Act, implementation of the preferred alternative may affect, but is not likely to adversely affect the Mexican spotted owl. Concurrence on this determination was received from the U.S. Fish and Wildlife Service on 9 July 2002, as part of a batch consultation on multiple construction projects in the park.

Implementation of the preferred alternative will result in minor, adverse short-term impacts to California condors through the potential for impacts to foraging habitat and as a result of increased contact with humans during construction. For purposes of Section 7 consultation under the Endangered Species Act, implementation of the preferred alternative may affect, but is not likely to adversely affect the California condor. Concurrence on this determination was received from the U.S. Fish and Wildlife Service on 9 July 2002, as part of a batch consultation on multiple construction projects in the park.

Implementation of the preferred alternative will result in negligible, adverse impacts to Sentry milk vetch due to the fact that Sentry milk vetch does not occur in the project area and the nearest population is several miles away. For purposes of Section 7 consultation under the Endangered Species Act, implementation of the preferred alternative will result in a no effect determination for the Sentry milk vetch. Concurrence on this determination was received from the U.S. Fish and Wildlife Service on 9 July 2002, as part of a batch consultation on multiple construction projects in the park.

Implementation of the preferred alternative will result in negligible short-term adverse impacts to the American peregrine falcon during construction. Implementation of the preferred alternative may affect individual peregrine falcons, but will not result in a trend toward federal listing or a loss of population viability. Concurrence on this determination was received from the U.S. Fish and Wildlife Service on 9 July 2002, as part of a batch consultation on multiple construction projects in the park.

Implementation of the preferred alternative will result in negligible short- and long-term adverse impacts to the Northern goshawk as a result of habitat disturbance. A survey of the project area was completed and no goshawks were detected.

Implementation of the preferred alternative will result in minor, short-term adverse impacts to recreation resources during construction. Moderate long-term beneficial impacts to recreation resources will result from removal of the substation from an area intended for public use. Implementation of the preferred alternative will result in minor, adverse short- and long-term impacts to visual quality as a result of new construction.

Full documentation of the assessment of actions having an affect on cultural resources, the Assessment of Effects form (AEF), is a part of the environmental document for this project (NPS 2003). After applying the Advisory Council on Historic Preservation's criteria for adverse effects (36 CFR, Part 800.5, Assessment of Adverse Effects), the National Park Service determines that implementation of the substation relocation project will have no adverse effect on identified historic properties. Concurrence on this determination from the State Historic Preservation Office was received on 3 December 2003.

***Degree of effect on public health or safety***. Adherence to mitigation measures designed to minimize safety risks and adverse impacts to visitors during the construction period will address these limited risks to public safety. Restoration of the former site of the substation near the powerhouse will include addressing any safety risks. Fencing of the new substation location and installation of new underground power lines will adhere to all current safety regulations and standard practices. Removal of the substation from an area intended for visitor use will improve public safety in this area.

***Unique characteristics of the geographic area such as proximity to historic or cultural resources, park lands, prime farmlands, wetlands, wild and scenic rivers, or ecologically critical areas***. As fully discussed in the EA/AEF, the preferred alternative will not affect water quality, archeological resources, ethnographic resources, air quality, floodplains, wetlands, prime or unique farmland, socioeconomics, soundscape, park operations, lighscape or minority or low income populations. No wild and scenic rivers are designated near the project area and none will be affected by implementation of the preferred alternative. No ecologically critical areas occur within the project area and only minimal disturbance to surrounding vegetation will occur.

The existing power substation is located within the Grand Canyon Village National Historic Landmark district. The substation was built in the mid-1950s (outside the period of historical significance) next to the historic powerhouse and is considered a non-contributing element to the historic district. Removal of this element will improve the architectural character of the historic district and its overall landscape. The

new substation location and the distribution line are outside the boundaries of this district and its construction will not affect any known historic properties.

The National Park Service, as documented in the EA/AEF for this project, has determined that implementation of the preferred alternative will result in a "no adverse effect to historic properties" determination. Concurrence on this determination from the State Historic Preservation Office was received on 3 December 2003.

Consultation with concerned tribal officials, Arizona State Historic Preservation Officer, and U. S. Fish and Wildlife Service has been completed.

***Degree to which effects on the quality of the human environment are likely to be highly controversial***. There were no highly controversial effects identified during either preparation of the EA/AEF or the public review period.

***Degree to which the possible effects on the quality of the human environment are highly uncertain or involve unique or unknown risks***. There were no highly uncertain, unique or unknown risks identified in the EA/AEF or during the public review period.

***Degree to which the action may establish a precedent for future actions with significant effects or represents a decision in principle about a future consideration***. The removal of the substation is an action consistent with the intent of the park's 1995 General Management Plan. The General Management Plan specifically states, "Visitor services on the South Rim will be concentrated in the historic village, the adjacent powerhouse area, and the business center. Functions now occurring in these areas not directly related to visitor services (for example, maintenance, storage, and employee housing) will be moved to areas where the visitor experience will not be affected. Instead of building new facilities, historic structures will be adaptively reused for visitor service functions." Removal of the substation from the powerhouse area will facilitate the potential future use of this area for visitor services. Future visitor services in this area are in the early stages of planning and analysis. However, if visitor services are not implemented in this area, moving the substation is still a beneficial and viable action for Grand Canyon National Park at this time. Therefore, while implementation of this project is an incremental stage in the potential future use of this area, it is also a viable project on its own. Grand Canyon National Park intends to implement this project regardless of whether this area becomes a visitor use area.

***Whether the action is related to other actions with individually insignificant but cumulatively significant impacts***. Impacts of the preferred alternative identified in the EA/AEF were to soils, vegetation, general wildlife populations, special status species, cultural resources, recreation and visual quality. As described in the EA/AEF, a variety of past, present, and reasonably foreseeable future actions have affected or may affect resources in the area. Implementation of the preferred alternative in combination with past, present and reasonably foreseeable future actions will result in impacts to resources that range from negligible to moderate.

***Degree to which the action may adversely affect districts, sites, highways, structures, or objects listed on National Register of Historic Places or may cause loss or destruction of significant scientific, cultural, or historical resources***. The existing power substation is located within the Grand Canyon Village National Historic Landmark district. The substation was built next to the historic powerhouse in the mid-1950s (outside the period of historical significance) and is considered a non-contributing element to the surrounding historic district. Removal of this element will improve the architectural character of the historic district and its overall landscape. The proposed substation location and the distribution line are outside the boundaries of this district and construction in this area will not affect any known historic properties. The powerhouse and the historic buildings surrounding it, within the Landmark district, are

sensitive cultural resources. Dismantling the substation will be done in careful consideration of these nearby structures and all efforts will be made to minimize the likelihood of any damage to these buildings. The substation is fenced and all dismantling activities will be confined to this area, further limiting the potential for effect to these other historic structures. On 3 December 2003, The State Historic Preservation Office concurred with the Park's determination that relocation of the power substation will not adversely impact historic properties.

Several archeological investigations have been completed within the area of potential effect. Of the multiple sites eligible for inclusion in the National Register of Historic Places located during the survey, six are located along the proposed power distribution line. Data recovery has been completed on all of these sites according to mitigation requirements and procedures approved by the Arizona State Historic Preservation Office. No remaining archeological sites will be affected by implementation of this project.

If previously unknown archeological resources are discovered during construction, all work in the immediate vicinity of the discovery will be halted until the resources are identified and documented. An appropriate mitigation strategy, if necessary, will be developed in consultation with the Arizona State Historic Preservation Office and concerned tribal officials.

***Degree to which the action may adversely affect an endangered or threatened species or its critical habitat***. Federally listed species with the potential to occur in the project area include the Mexican spotted owl, California condor and Sentry milk vetch. Mexican spotted owls were listed as a threatened species in 1993. The presence of this species was confirmed in Grand Canyon National Park in 1992. The California condor was listed as an endangered species in 1967. A nonessential, experimental population of California condors has been established in Northern Arizona, and within Grand Canyon National Park the condor has the full protection of a threatened species. Sentry milk vetch, a species endemic to Grand Canyon National Park, was listed as an endangered species in 1990. It has been determined by park staff that implementation of the preferred alternative will not affect Sentry milk vetch and may affect, but is not likely to adversely affect, the California condor or the Mexican spotted owl. Mitigation measures have been developed jointly between park staff and the U.S. Fish and Wildlife Service (FWS) to minimize the potential for adverse impacts to these species during project implementation. These measures are included as part of the preferred alternative. The FWS has been consulted and concurred with these determinations on 9 July 2002.

***Whether the action threatens a violation of Federal, state or local environmental protection law***. The preferred alternative violates no federal, state, or local environmental protection laws.

## IMPAIRMENT OF PARK RESOURCES OR VALUES

In addition to determining the environmental consequences of the preferred and other alternatives, National Park Service policy (*Management Policies*, 2001) requires analysis of potential effects to determine whether or not actions will impair park resources. The fundamental purpose of the National Park System, established by the Organic Act and reaffirmed by the General Authorities Act as amended, begins with a mandate to conserve park resources and values. National Park Service managers must always seek ways to avoid, or to minimize to the greatest degree practicable, adverse impacts on park resources and values. However, the laws do give the National Park Service the management discretion to allow impacts to park resources and values when necessary and appropriate to fulfill the purposes of the park, as long as the impact does not constitute impairment of the affected resources and values. Although Congress has given the National Park Service the management discretion to allow certain impacts within parks, that discretion is limited by the statutory requirement that the National Park Service must leave park resources and values unimpaired, unless a particular law directly and specifically provides otherwise. The prohibited impairment is an impact that, in the professional judgment of the responsible National

Park Service manager, will harm the integrity of park resources or values, including the opportunities that otherwise will be present for the enjoyment of those resources or values. Impairment may result from National Park Service activities in managing the park, visitor activities, or activities undertaken by concessionaires, contractors, and others operating in the park. An impact to any park resource or value may constitute impairment. An impact will be more likely to constitute impairment to the extent that it affects a resource or value whose conservation is:

- Necessary to fulfill specific purposes identified in the establishing legislation or proclamation of the park;
- Key to the natural or cultural integrity of the park; or
- Identified as a goal in the park's general management plan or other relevant NPS planning documents.

Because there will be no major adverse impacts to a resource or value whose conservation is (1) necessary to fulfill specific purposes identified in the establishing legislation or proclamation of Grand Canyon National Park; (2) key to the natural or cultural integrity of the park; or (3) identified as a goal in the park's general management plan or other relevant National Park Service planning documents, there will be no impairment of Grand Canyon National Park's resources or values as a result of implementation of the preferred alternative.

**PUBLIC INVOLVEMENT**

The power substation relocation proposal was included in a public scoping letter that was sent to 353 individuals on 23 July 2001. The letter described the proposed project and requested comments. The mailing list included federal and state agencies, special interest groups, American Indian tribes, and interested citizens. A press release was issued and the letter was posted on the park's website. Four responses were received. These included a letter from the Navajo Nation Historic Preservation Department which requested separate consultation with tribal chapters; the Hopi Tribe Cultural Preservation Office which requested a copy of the Environmental Assessment when complete; the U.S. Fish and Wildlife Service which provided a species list; and a private individual who expressed concern regarding the justification for spending money to move the substation and that historic areas of the park should be left alone. The Park Service performed a content analysis on this information, information gained from internal scoping, and information gained from scoping with other agencies. From this effort, the Park Service did not identify any additional significant issues for analysis.

The EA/AEF was made available for public review and comment during a 30-day period ending 29 October 2003 through both direct mailing and posting on the park's website. Two responses offering support for the preferred alternative were received, including one from a private individual and one from Xanterra Parks and Resorts.

**CONCLUSION**

The preferred alternative, which includes relocation of the power substation from the powerhouse area of Grand Canyon Village to a transportation/utility corridor outside the Village, and the installation of underground distribution lines, does not constitute an action that normally requires preparation of an environmental impact statement (EIS). Negative environmental impacts that could occur are negligible to moderate in effect. There are no unmitigated adverse impacts on public health, public safety, threatened or endangered species, sites or districts listed in or eligible for listing in the National Register of Historic Places, known ethnographic resources, or other unique characteristics of the region. No highly uncertain or controversial impacts, unique or unknown risks, cumulative effects, or elements of precedence were identified. Implementation of the action will not violate any federal, state, or local environmental protection law.

Based on the foregoing, it has been determined that the project does not constitute a major federal action significantly affecting the quality of the human environment and an EIS will not be required for this project and thus will not be prepared.

Recommended: _____ 6/7/04
Jeffrey Cross — Date
Science Center Director, Grand Canyon National Park

Recommended: _____ 5/28/04
for Joseph F. Alston — Date
Superintendent, Grand Canyon National Park

Approved: _____ 6/24/04
Steve P. Martin — Date
Intermountain Regional Director

**ERRATA SHEET**

**Relocation of the Power Substation**
**Grand Canyon National Park**

The NPS received two letters in response to the request for comments on the EA/AEF for the Power Substation Relocation (September 2003). The two comments expressed support for the project and were not considered substantive. However, internal NPS review and APS review of the EA/AEF during the comment period noted some errors in factual information presented in the document and the need for slight modifications in project components and descriptions. These are addressed and corrected, as noted below.

**Comment: Page 7, lightscape – The EA/AEF states that "Construction and operation of the substation would conform to all standards required by the NPS to maintain the existing dark sky. Although the substation would require lighting for safety reasons, it would be shielded and directed towards the ground. It would not affect the ambient light outside the substation area."**

**Response:** This paragraph has been reworded as follows:

*No outdoor lighting would be used for the substation, unless necessary for short-term repairs or emergencies, or as required by law or policy. For example, brighter lighting may be required for use in emergency situations requiring nighttime work at the substation, but would only be used on an occasional basis and temporarily. The final lighting plan for the substation will be reviewed and approved by park management.*

**Comment: Page 8, substation size – The EA/AEF states that "The substation would be contained within a fenced enclosure with dimensions not to exceed 225 feet by 225 feet."**

**Response:** This sentence has been rewritten as follows:

*The substation will be contained within a fenced enclosure with dimensions not to exceed 225 feet by 225 feet; however, the size of the enclosure will be the minimized as much as possible. The final size of the enclosure will be reviewed and approved by park management prior to construction.*

**Comment: Page 8, substation access – The EA/AEF states that "Access for the substation and distribution line would be from Center Road, across from the Clinic Road turn-off, along an existing utility access road." Further review of access routes to the substation has resulted in the determination that, while this existing utility access road will likely be used during construction of the substation, a different road will be used for APS access to the substation following construction. A 0.3 mile segment of utility access road beginning at the terminus of Hualapai Road in Pinyon Park will be used.**

**Response:** This sentence was modified to read as follows:

*Access for the substation and distribution line during construction would be from either Center Road, across from the Clinic Road turn-off, or through Pinyon Park, along an existing utility access road. However, primary access to the substation for routine APS operations following construction will be the 0.3 mile segment of utility access road beginning at the terminus of Hualapai Road in Pinyon Park.*

**Comment: Page 9. access road description – The EA/AEF states that "No new access roads would be built for this project. Access for construction vehicles and equipment would occur along existing**

**roads and rights-of-way, specifically the existing right-of-way road from Clinic Road along Center Road." APS requires a 12-foot wide gravel access road to the new substation. This was not identified in the EA/AEF. Due to the fact that this requires upgrading an existing road to these standards, the park has selected the use of 0.3 miles of utility access road accessible through a locked gate in Pinyon Park. This is a residential area, not a visitor use area and upgrading of this road (instead of upgrading the road off of Center Road) will result in fewer conflicts with visitors and less impact to park resources.**

**The parkwide interdisciplinary team confirmed on 14 April 2004 that upgrading this 0.3 mile segment of existing road behind Pinyon Park (instead of the 0.5 mile segment of road off of Center Road) will result in fewer impacts to park resources and less conflict with visitors, than upgrading the previously identified road segment. This change in project scope will not increase the degree of impact to park resources as described in the EA/AEF.**

**Response:** This statement has been modified to read as follows:

*No new access roads will be built for this project. Access for construction vehicles and equipment will occur along existing roads and rights-of-way, specifically the existing right-of-way road across from Clinic Road along Center Road and the existing utility corridor road accessible through Pinyon Park.*

*Following establishment of the substation in its new location, APS requires access to this facility for routine monitoring, periodic maintenance and emergency repairs. Minimum standards for road access for these activities include a 12-foot wide road surface with at least 8 inches of aggregate base. As part of this project, approximately 0.3 miles of existing dirt road between Pinyon Park (at the end of Hualapai Road) and the new substation will be upgraded to meet these standards. This road will continue to be gated at its junction with Hualapai Road in Pinyon Park, to restrict access to authorized users only.*

**Comment: Page 9, preferred alternative description – The proposed methods of construction should be described, including the potential for blasting.**

**Response**: Under Construction, the following sentence has been added to the first paragraph:

*Both light and heavy construction equipment, including equipment such as bull dozers and excavators, will likely be necessary to dismantle the existing substation and to construct the new substation and underground distribution lines. Blasting is not anticipated for this project. NPS considers the use of blasting as a last resort, when other tools or equipment are impractical. If blasting is considered the best tool for the job by the contractor and is permitted by NPS, it would be conducted in accordance with Director's Order 65 (Explosives Use and Blasting Safety) and a blasting safety plan would be developed prior to implementation.*

**Comment: Page 9, time frame for construction – The EA/AEF states that "The construction of the substation and distribution line would be completed within two years with the majority of construction activities occurring between May and October." While it is expected that construction would be complete within two years, the Park is not certain during what months construction would occur. Weather permitting, construction may occur year round until complete.**

**Response: This paragraph was modified to read as follows:**

*The construction of the substation and distribution line would be completed within two years. The construction work force would peak at approximately 16 people on-site at any one time.*

**Comment: Page 10, Figure 2, project area map – The EA shows the location of the new substation just north of the proposed distribution line, along an existing utility access road. Upon further on-site evaluation of the project area, a slightly different location has been selected. In order to minimize the removal of vegetation necessary, a site has been selected that is within an existing fuel break. This will result in approximately 75% fewer trees begin removed due to its more open condition.**

**The parkwide interdisciplinary team confirmed on 14 April 2004 that constructing the new substation within the existing fuel break (instead of the originally proposed site just north of the utility access road) will result in fewer impacts to park resources and substantially less tree removal than the original proposal. This slight change in project location will not increase the degree of impact to park resources as described in the EA/AEF.**

**Response:** This map has been modified to show the revised location.

**Comment: Page 11, Figure 3, proposed distribution line – This figure in the EA shows the distribution line east of the new substation up to the Clinic. While the text in the EA stated correctly that the distribution line would need to be constructed for approximately one mile from the substation, Figure 3 does not correctly display this. The distribution line should be shown continuing along Havasupai Street approximately another 0.5 miles to the intersection with Barry Hance Circle.**

**Response:** This map has been modified to show the revised location.

**Comment: Page 14, mitigation measures for special status species – The list of protective measures for the California condor and Mexican spotted owl in this section of the document is not complete. Mitigation measures should include, as applicable, all conservation measures listed in the Batch Biological Assessment for construction projects in Grand Canyon National Park (NPS 2002).**

**Response**: The following measures have been added to this list on page 14, to make the EA/AEF consistent with the biological assessment (June 2002) and U.S. Fish and Wildlife Service concurrence with this project (July 2002) as follows:

- *Prior to the start of construction, the Park will contact personnel monitoring California condor locations and movement in the Park to determine the locations and status of condors in or near the project area.*

- *If non-nesting condors occur within one mile of the project area, blasting will be postponed until the condors leave or are hazed by permitted personnel.*

- *If condor nesting activity is known within one mile of the project area, then blasting activity will be restricted during the active nesting season. The active nesting season is February 1 – September 30. These dates may be modified based on the most current information regarding condor nesting and consultation with the Park biologist and the Fish and Wildlife Service.*

- *If a construction project outside of Mexican spotted owl (MSO) protected activity centers (PAC) occurs within one mile of a known PAC nest or roost site, or the boundary of a PAC where the nest or roost site is not known, or unsurveyed restricted, protected or predicted MSO habitat, then all blasting in that project area will be restricted to the non-breeding season (September 1 – February 28).*

**Comment: Page 23, second paragraph regarding federally listed species – this is incomplete and should describe the history of consultation with the Fish and Wildlife Service.**

**Response**: This paragraph has been reworded to read as follows:

*The Park Service met on 13 December 2000 with U.S. Fish and Wildlife Service (USFWS) and Arizona Game and Fish Department personnel to discuss this project proposal and other future proposals. The USFWS responded to the project's scoping letter with a list of threatened, endangered or proposed species that may have the potential to occur in the project area on 13 August 2001. NPS also discussed this project with the USFWS during the preparation of the Parkwide Construction Program Batch Biological Assessment during March – June 2002 (NPS 2002). A detailed analysis of the expected effects of this project on Threatened and Endangered species is the subject of this separate Batch Biological Assessment (NPS 2002). USFWS concurred with the park's determination that implementation of this project, along with many other construction projects in the park over the next five years, may affect, but is not likely to adversely affect, the California condor or the Mexican spotted owl. Sentry milk vetch, bald eagles and peregrine falcons were also addressed in this document (USFWS letter July 9, 2002).*

**Comment: Page 37, first paragraph regarding federally listed species– this is incomplete and should describe the history of consultation with the Fish and Wildlife Service.**

**Response:** This paragraph has been replaced with the paragraph below.

*The Park Service met on 13 December 2000 with U.S. Fish and Wildlife Service (USFWS) and Arizona Game and Fish Department personnel to discuss this project proposal and other future proposals. The USFWS responded to the project's scoping letter with a list of threatened, endangered or proposed species that may have the potential to occur in the project area on 13 August 2001. NPS also discussed this project with the USFWS during the preparation of the Parkwide Construction Program Batch Biological Assessment during March – June 2002 (NPS 2002). A detailed analysis of the expected effects of this project on Threatened and Endangered species is the subject of this separate Batch Biological Assessment (NPS 2002). USFWS concurred with the park's determination that implementation of this project, along with many other construction projects in the park over the next five years, may affect, but is not likely to adversely affect, the California condor or the Mexican spotted owl. Sentry milk vetch, bald eagles and peregrine falcons were also addressed in this document (USFWS letter July 9, 2002).The thresholds of change for the intensity of an impact are defined as follows:*

**Comment: Page 37, Alternative B, direct and indirect impacts – This is slightly misleading and should adequately describe the distance to the nearest occupied Mexican spotted owl habitat.**

**Response:** The first sentence has been changed to read as follows:

*The closest known Mexican spotted owl protected activity center is near Yaki Point, greater than 1 mile from the proposed substation and distribution line.*

**Comment: Page 38, third paragraph regarding blasting – this is misleading and states that Mexican spotted owl breeding season restrictions are necessary for all construction activities. This is not the case, due to the fact that the nearest occupied habitat is greater than 1 mile from the project area.**

**Response:** This paragraph has been reworded as follows:

*Blasting within one mile of occupied Mexican spotted owl habitat has the potential to affect spotted owls (USFWS 2001). Blasting is not anticipated for this project. NPS considers the use of blasting as a last resort, when other tools or equipment are impractical. If blasting is considered the best tool for the job by the contractor and is permitted by NPS, it would be conducted in accordance with Director's Order 65 (Explosives Use and Blasting Safety) and a blasting safety plan would be developed prior to implementation. To minimize the potential for blasting impacts to Mexican spotted owls, a mitigation measure has been incorporated into the project (page 14) that requires that blasting within 1 mile of occupied habitat or suitable habitat that has not been surveyed, be restricted to the non-breeding season (September 1 – February 28). As of this writing, there are no known spotted owl protected activity centers within one mile of the project area.*

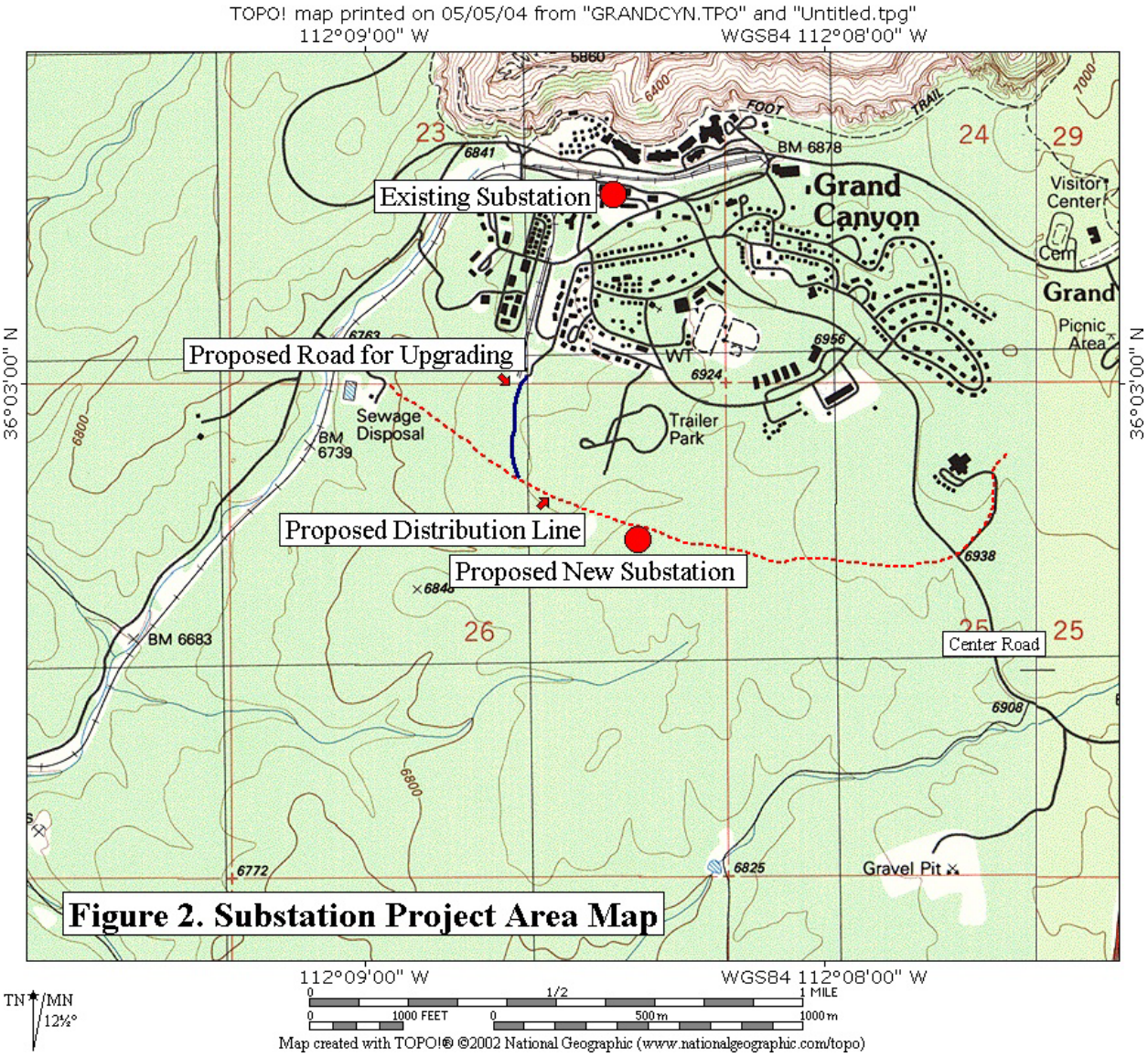


**Figure 2. Substation Project Area Map**